

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY PCT

(Chapter II of the Patent Cooperation Treaty)

REC'D 24 MAY 2005

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference		FOR FURTHER ACTION		
See Form PCT/PEA/416				
International application No. PCT/EP2004/003032	International filing date (<i>day/month/year</i>) 19.03.2004		Priority date (<i>day/month/year</i>) 03.04.2003	
International Patent Classification (IPC) or national classification and IPC C11D17/02, C11D3/20, C11D9/26				
Applicant UNILEVER PLC et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 1 sheets, as follows:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application 				
Date of submission of the demand 21.09.2004	Date of completion of this report 23.05.2005			
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Klier, E Telephone No. +49 89 2399-8531			
				

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/003032

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
 - international search (under Rules 12.3 and 23.1(b))
 - publication of the international application (under Rule 12.4)
 - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-17 as originally filed

Claims, Numbers

6-13 as originally filed
1-5 received on 30.08.2004 with letter of 26.08.2004

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
- 3. The amendments have resulted in the cancellation of:
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):
- 4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/003032

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-13
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2004/003032

Re Item V.

The following documents are referred to in this communication:

- D1 : EP-A-0 848 056 cited in the application as US-A-5972860
- D2 : WO-A-0188079
- D3 : US-A- 5 895 780
- D4 : EP-A-1 239 027
- D5: EP-A-0413284 cited in the application as US-A-5017302

- 1 The amendments comply with Art. 34(2)(b) of the PCT, because the amendment is based on page 5, lines 19 - 25 and claim 1 of the application as filed.
- 2 Document D1, which is considered to represent the most relevant state of the art, discloses a process for the production of aerated solid detergent compositions (claim 11; examples). Water-soluble polymers or polyols can be part of the soap composition. The polyol can improve the stability of air bubbles present in the molten material of fatty acid soap and nonionic surfactant (page 4, lines 43 -49). From this, the subject-matter of independent claim 1 differs in that a fatty alcohol is added into the melt prior or after the air or gas has been incorporated.
 - 2.1 The subject-matter of claim 1 is therefore novel (Article 33(2) PCT)
The problem to be solved by the present invention may be regarded as to further improve the stabilisation of the air in the formulation and at least maintain the physical and use properties.
 - 2.2 The solution to these problems proposed in claim 1 of the present application are considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
Tables 2 - 4 of the application provide evidence, that the addition of cetyl alcohol after the aeration of the melted composition stabilizes the air bubbles. The use and physical properties are improved. Thus, the problems have been solved.
 - 2.3 Document D2 discloses that foam can be stabilized by water soluble polymers or waxes such as fatty alcohols, fatty acids or fatty acid esters (page 53, paragraph3 -

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2004/003032

page 54, paragraph 2). Polyvinyl alcohols are particular preferred stabilizers. None of the documents discloses that the fatty alcohol can be added to the molten composition prior or after aeration.

D5 describes that the wet cracking characteristics of non aerated bars are improved by the addition of stearyl alcohol to the bar formulation.

Table 4 of the application provides evidence, that the addition of cetyl alcohol was much more successful in stabilizing the air bubbles in the melt than polyvinyl alcohol. In addition the hardness was good and the use properties improved. These improvements are unexpected.

2.4 Claims 2-13 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

CLAIMS

1. A process for the manufacture of aerated solid shaped detergent compositions comprising the steps of:
 - 5 i) preparation of a melt of the detergent composition to be cast; *0.1% to 10%*
 - ii) addition of fatty alcohol to the melt either prior to or after the air or gas has been incorporated into the melt;
 - 10 iii) mixing the melt in a high shear mixer;
 - iv) pouring the melt into a mould;
 - v) cooling the mould;
 - vi) demoulding the solidified-shaped article.
- 15 2. The process of claim 1 wherein the detergent composition comprises:
 - a) 20 % to 60 % by weight of detergent active;
 - b) 0.1 % to 10 % by weight fatty alcohol;
 - c) 30 % to 60 % by weight water and/or polyhydric alcohol.
- 20 3. The process of claim 2 wherein the detergent active is soap.
- 25 4. The process of any preceding claim wherein the composition additionally comprises 1 % to 10 % by weight non-soap detergent active.
- 30 5. The process of any of any preceding claim wherein the fatty alcohol comprises 1 % to 9 % by weight.